



## **Appendix C**

Desert Tortoise Survey Report

**Kimley»»Horn**



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**Subject: Desert Tortoise Survey Report for RPCA Lear Avenue Project  
San Bernardino County, California**

Dear Ms. Fan:

Rincon Consultants, Incorporated (Rincon) conducted a focused survey for Mojave Desert tortoise (*Gopherus agassizii*) in October 2023, followed by a desert tortoise camera survey in October 2024 for the RPCA Lear Avenue Project (project) at the request of Kimley-Horn and RPCA Solar 15, LLC (Applicant). The study area included an approximately 80-acre project site and a 100-foot buffer along Lear Avenue in Twentynine Palms, San Bernardino County, California (Figure 1, Figure 2). Rincon understands the Applicant is contemplating development of a solar project within the project site. The surveys were conducted to ensure proper analysis of potential impacts to the species from project activities. The report herein describes the results of the surveys.

## **Desert Tortoise**

### **Status and Natural History**

Desert tortoises reach 8 to 15 inches in length and 4 to 6 inches in shell height. Hatchlings emerge from eggs at about 2 inches in length. Adults have a domed carapace and relatively flat, lower shell. Their shells are high-domed and greenish-tan to dark brown in color. Adult desert tortoises weigh 8 to 15 pounds. The forelimbs have heavy, claw-like scales and are flattened for digging (Ernst et al. 1994).

Desert tortoises occupy a variety of desert habitats from flats and slopes dominated by creosote bush scrub at lower elevations to rocky slopes and juniper woodlands at higher elevations (Germano et al. 1994). Throughout most of the Mojave Desert, tortoises are most often found on gently sloping terrain with sandy-gravel soils and where there is sparse cover of low-growing shrubs, with sufficient grasses and forbs for foraging (United States Fish and Wildlife Service [USFWS] 1994).

Desert tortoises are burrowing reptiles and spend much of their time underground. Peak activity is in the relatively moderate temperatures of the spring and fall when mating occurs (Rostal et al. 1994). They are long-lived and require 13 to 20 years to reach sexual maturity, in addition to having low reproductive rates.

Home ranges can vary greatly between years and locations. Typical home ranges for males extend 80 hectares (0.3 square mile) or more with females occupying half that area or less (Burge 1977, Berry 1986). Desert tortoises occur from below sea level and have been observed up to 7,300 feet.



The desert tortoise was listed as threatened under the California Endangered Species Act in 1989 and under the federal Endangered Species Act in 1980. Threats to desert tortoise include habitat loss, habitat degradation, disease, and predation. Loss of suitable desert habitat to urban expansion is the primary means of habitat loss. Off-highway vehicle use has resulted in degradation of habitat. The most common disease affecting desert tortoise is Upper Respiratory Tract Disease likely contracted from captive tortoises released into the wild. In addition, increased predation by ravens, following human expansion, has severely impacted the species.

## Historical and Known Occurrences

Prior to the survey, a review of available literature was conducted to determine whether desert tortoise have been previously reported within the study area and the surrounding USGS 7.5-minute topographic quadrangles: *Sunfair, Joshua Tree North, Goat Mountain, Deadman Lake SW, Deadman Lake SE, Twentynine Palms, Queen Mountain, Indian Cove, and Joshua Tree South, California*. The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB; CDFW 2023a), and Biogeographic Information and Observation System (BIOS; CDFW 2023b) were reviewed, in addition to the *Preparing For Any Action That May Occur Within The Range Of The Mojave Desert Tortoise (Gopherus agassizii)* (USFWS 2019).

The CNDDDB search provided 5 documented desert tortoise occurrences within a 9-quadrangle search around the study area (CDFW 2023a). An occurrence from 1991 covers the project site. The occurrence covers a non-specified area, but the notes indicate that tortoises were observed within Twentynine Palms Marine Corps Training Center and the Sandhill Tortoise Preserve. The boundaries of which are located at least 5 miles from the study area. Densities for that record were estimated at 20 to 50 tortoises per square mile. The remaining 4 occurrences date from 1991 (8.9 miles northeast), 2009 (2.6 miles southwest), 2008 (3.2 miles southwest), and 2018 (12.75 miles southwest).

The study area does not include any designated critical habitat for desert tortoise. The closest critical habitat is located 7.7 miles southeast of the study area.

## Survey Methods

### Desert Tortoise Survey

Rincon biologists Amy Leigh Trost and Nicholas Fager conducted a focused desert tortoise survey of the study area on October 13, 2023, from 0800 to 1500 hours. Weather during the focused survey was favorable for finding desert tortoise and included temperatures of 58 to 77 degrees Fahrenheit, winds of 4 to 5 miles per hour, and partly cloudy skies. The study area included the 80-acre project site and a 100-foot buffer. The survey adhered to the methodology described in *Preparing For Any Action That May Occur Within The Range Of The Mojave Desert Tortoise (Gopherus agassizii)* (USFWS 2019). The biologists walked line transects spaced at 10 meters (approximately 30 feet) to ensure 100 percent visibility of the suitable habitat, where accessible. Areas of the 100-foot buffer that overlapped with adjacent private property were evaluated from within the project site visually using binoculars (10x42). Desert tortoise, their sign, or potential burrows were mapped using ArcGIS Field Maps (Figure 2).

### Desert Tortoise Camera Survey

Rincon biologists Bryant Reynolds and Nicholas Fager installed two wildlife cameras (Campark T20 Mini Trail Camera) and conducted a pedestrian survey of the project site on October 14, 2024, from 0845 to 1430 hours. Weather conditions during the desert tortoise camera survey included



temperatures of 70 to 95 degrees Fahrenheit, winds of 3 to 9 miles per hour, and clear skies. The pedestrian survey area included the project site and a 100-foot buffer. The biologists walked line transects spaced 20 meters apart to re-assess the site for desert tortoise, their sign, or new potential burrows. Areas of the 100-foot buffer that overlapped with adjacent private property were evaluated from within the project site visually using binoculars (8x42). The two wildlife cameras were installed approximately three feet northeast of one potential Class 4 burrow observed during the desert tortoise survey conducted on October 13, 2023. Zip ties were used to fasten each camera to a t-post that was hammered approximately one-foot into the ground. The wildlife cameras were programmed to take motion-activated photographs at fifteen-second intervals. Photographs captured by the wildlife cameras were examined on October 21 and October 28, 2024. Both wildlife cameras were deconstructed and removed from the project site on October 28, 2024, from 0915 to 1015 hours. Weather conditions during camera removal activities included temperatures of 72 to 76 degrees Fahrenheit, winds of 6 to 8 miles per hour, and partly cloudy skies. Survey Results

## Project Setting and Site Conditions

The study area consists entirely of Creosote bush (*Larrea tridentata*) – white bursage scrub (*Ambrosia dumosa*) Shrubland Alliance (Sawyer et al. 2009). Elevation on site ranges from approximately 2,206 ft above mean sea level (msl) in the west to 2,265 ft above msl in the east (Google Earth Pro 2023). Surface flow of water was present, concentrated on the western side of the study area.

## Desert Tortoise Survey

No desert tortoises and no sign of tortoise (tracks, scat) were observed in the study area during the focused survey conducted on October 13, 2023. One Class 4 burrow (good condition; possibly desert tortoise) was observed near the eastern edge of the project site (Figure 2). The burrow was the appropriate shape (half dome) for a desert tortoise, but no tortoise or sign was present and no sign was observed in the remainder of the study area. Site photographs are provided in Attachment 1.

Wildlife species observed during the survey included black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaidura macroura*), yellow-rumped warbler (*Setophaga coronata*), common raven (*Corvus corax*), and western whiptail (*Aspidoscelis tigris*). No federally or State listed species were observed during the desert tortoise survey.

## Desert Tortoise Camera Survey

No desert tortoise, sign of desert tortoise, or new potential burrows were observed during the desert tortoise camera survey conducted from October 14 to October 28, 2024. The previously observed Class 4 burrow near the eastern edge of the project site appeared to have regressed in quality, as the burrow apron has partially filled with sand since it was first observed (Photograph 7). The burrow opening remains approximately five inches wide, and the back of the burrow was not visible.

Two wildlife species were photographed and identified during the desert tortoise camera survey: coyote (*Canis latrans*) and white-tailed antelope squirrel (*Ammospermophilus leucurus*). The white-tailed antelope squirrel was photographed on October 24, 2024, and was observed briefly (less than one minute) digging in the Class 4 burrow; however, this was the only observations of the species and no other activity pertaining to the burrow was observed during the survey. Two occurrences of kangaroo rat species (*Dipodomys* sp.) were photographed on October 17 and 25, 2024, and the individuals were unable to be definitively identified to species due to low visibility. However, Rincon biologists determined the species were likely Merriam's kangaroo rat (*Dipodomys merriami*) or desert kangaroo rat (*Dipodomys deserti*) based on the individuals' discernable morphologies as well as the



known range of the species. Other wildlife species observed during the desert tortoise camera survey included common raven, house finch, turkey vulture (*Cathartes aura*), white-crowned sparrow (*Zonotrichia leucophrys*), western whiptail, zebra-tailed lizard (*Callisaurus draconoides*). No federally or State listed species were observed during the desert tortoise camera survey. Although Merriam's kangaroo rat may have been observed on site, the site is not located within the known range of the federally and State-protected Merriam's kangaroo rat subspecies: San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*).

## Summary and Conclusions

The project site has potential to support desert tortoise given its location within the species known range. Suitable habitat for desert tortoise and one burrow of suitable size and shape occurs in the study area; however, no desert tortoise or sign of desert tortoise were observed during the surveys and there is a lack of recent known occurrences of the species within one mile of the study area. The quality of the potential burrow on site has degraded over the last year, indicating that it has not likely been occupied, and camera survey results were negative for desert tortoise. Further, desert tortoise activity may be deterred by the use of off-road recreational vehicles that was observed throughout the project site and in the vicinity of the study area during the surveys (Photograph 2). A pre-construction survey for desert tortoise should be conducted no more than 30 days prior to the commencement of construction activities in accordance with USFWS guidelines (USFWS 2019).

Thank you for your consideration and for this opportunity to support your project. If you have any questions regarding this submission or any of the information provided herein, please contact Andrea Maben at 442-325-7967 or [amaben@rinconconsultants.com](mailto:amaben@rinconconsultants.com), or Angie Harbin-Ireland at 858-243-1505 or [aharbin@rinconconsultants.com](mailto:aharbin@rinconconsultants.com).

Sincerely,  
**Rincon Consultants, Inc.**

Nicholas Fager  
Biologist

Andrea Maben  
Project Manager

Angie Harbin-Ireland  
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## Attachments

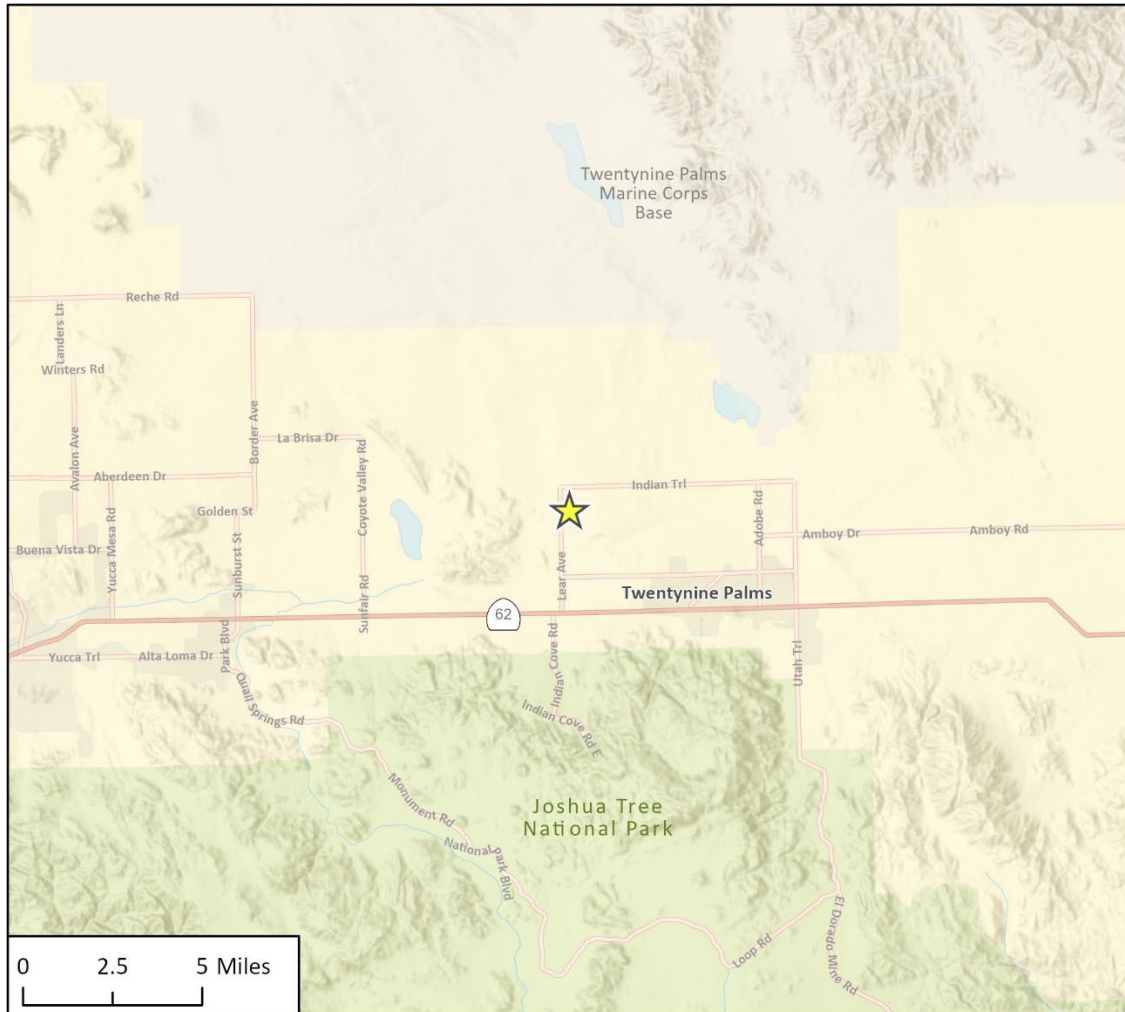
- Figure 1 Regional Location
- Figure 2 Study Area Location
- Attachment 1 Site Photographs



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**Figure 1 Regional Location**



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23-15079 Lear BIO  
Fig.1 Regional Location Lear Site

Project Location

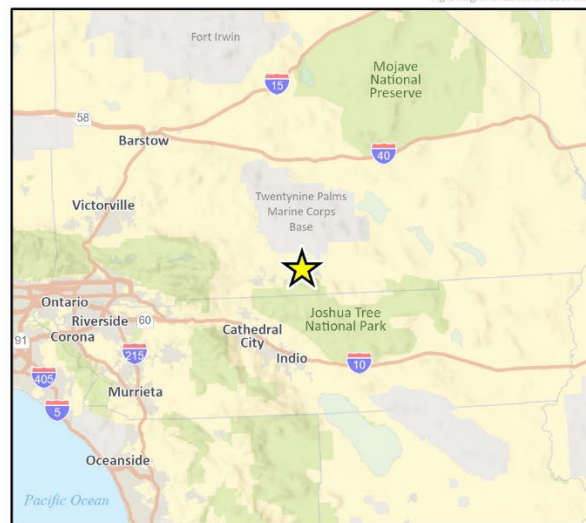
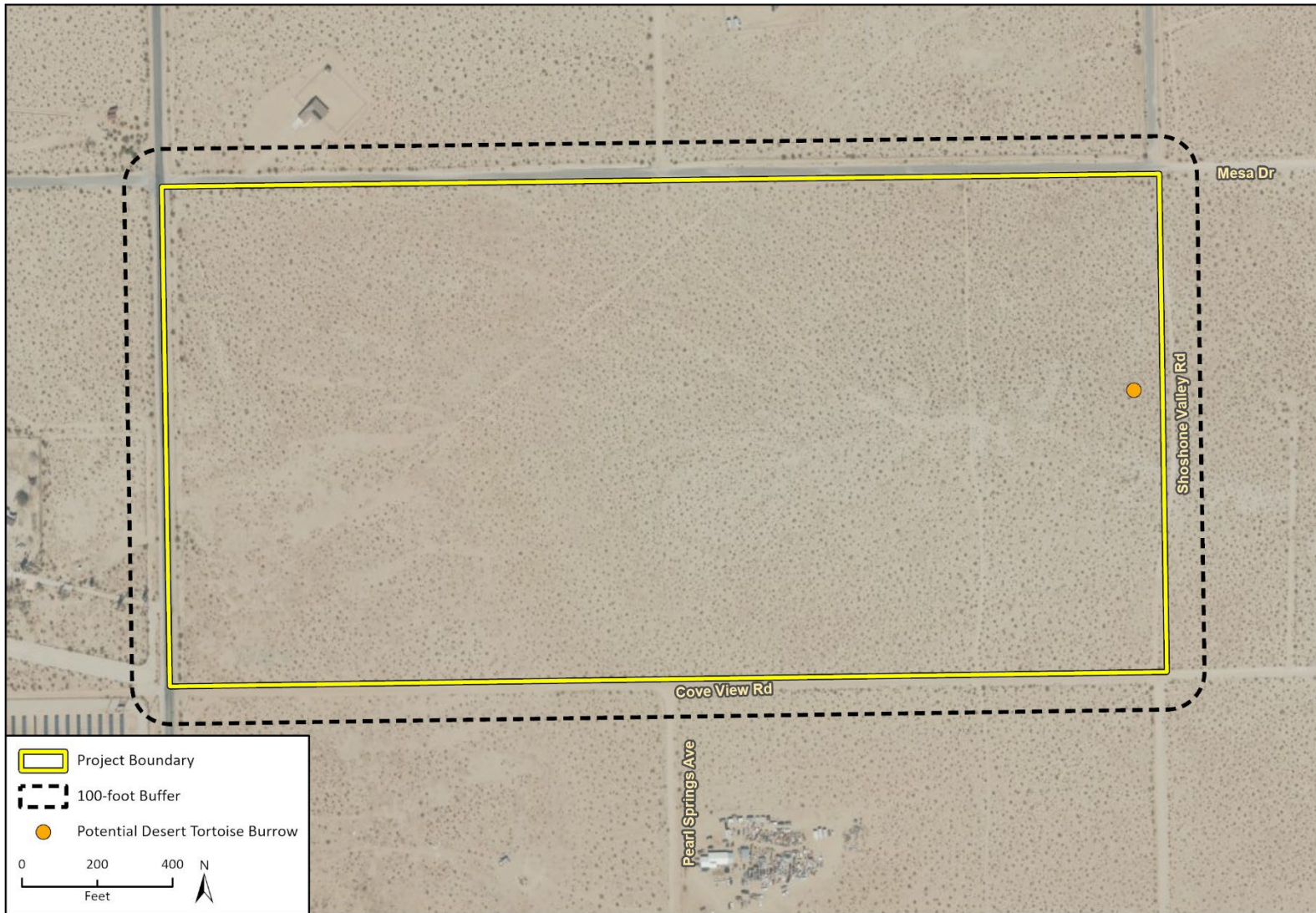


Figure 2 Study Area Location



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23-15079 Lear BIO  
Fig 2 Project Location



# **Attachment 1**

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Site Photographs



**Photograph 1.** View of the project site from the southwest corner, facing northeast (October 2023).



**Photograph 2.** Off-road vehicle tracks among creosote bush, facing northeast (October 2023).



**Photograph 3.** View of the project site from the northwest corner, facing southeast (October 2023).



**Photograph 4.** Potential desert tortoise burrow, facing south (October 2023).



**Photograph 5.** View of the project site from the northeast corner, facing southwest (October 2023).



**Photograph 6.** View of the project site from the southeast corner, facing northwest (October 2023).



**Photograph 7.** Potential desert tortoise burrow, facing south (October 2024).



**Photograph 8.** Potential desert tortoise burrow and wildlife cameras, facing south (October 2024).



**Photograph 9.** White-tailed antelope squirrel, facing southwest (October 2024).



**Photograph 10.** Unidentified kangaroo rat species, facing southwest (October 2024).